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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,255	09/24/2003	Thomas J. Hunt	CS-21,256	3290

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EXAMINER

EDMONDSON, LYNNE RENEE

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 08/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/668,255

Applicant(s)

HUNT ET AL.

Examiner

Lynne Edmondson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/24/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-13 and 15-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim (US 2005/0082258 A1).

Kim teaches a disc shaped sputter target/backing plate assembly made by forming spaced apart ridges within the surface of the backing plate (figures 5-9 and paragraph 31), forming a sputter target with a sputtering surface and bonding surface, applying solder material to the interface spaces and allowing the solder to solidify to form a bond. Ridges are circular, arcuate or polygonal (figure 7 and paragraphs 16, 39 and 40) with heights between 0.001 to 0.1 inches, widths of 0.001 to about 1 inch with a distance between ridges of about 0.001 to about 1 inch (paragraphs 38, 44-46 and 49). Targets and sputtering plates comprise conventional materials (paragraphs 5 and 54).

3. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kachalov et al. (US 2005/0011749 A1).

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Kachalov teaches a disc shaped sputter target/backing plate assembly made by forming spaced apart ridges within the surface of the backing plate, forming a sputter target with a sputtering surface and bonding surface, applying solder material to the interface spaces and allowing the solder to solidify to form a bond. Ridges are circular, arcuate or polygonal (figures 1-3 and paragraph 26) with heights between 0.01 to 0.5 inches (paragraph 25) and widths of .01 to .05 inches (paragraph 27). Targets and sputtering plates comprise conventional materials (paragraphs 2, 21 and claims 4-7). The solder comprises Sn, which may be combined with Pb, In, Ag and/or Cu (paragraph 34).

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US 2005/0082258 A1) in view of Hurwitt et al. (USPN 5879524).

Kim teaches a disc shaped sputter target/backing plate assembly made by forming spaced apart ridges within the surface of the backing plate (figures 5-9 and paragraph 31), forming a sputter target with a sputtering surface and bonding surface, applying solder material to the interface spaces and allowing the solder to solidify to form a bond. Ridges are circular, arcuate or polygonal (figure 7 and paragraphs 16, 39

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and 40) with heights between 0.001 to 0.1 inches, widths of 0.001 to about 1 inch with a distance between ridges of about 0.001 to about 1 inch (paragraphs 38, 44-46 and 49). Targets and sputtering plates comprise conventional materials (paragraphs 5 and 54). However the solder is not further disclosed.

Hurwitt teaches bonding a sputter target to a backing plate via Sn-Pb or Sn-In solder particularly when bonding Cu backing plates (col 1 line 65 – col 2 line 25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a convention solder such as Sn-Pb or Sn-In to form a reliable connection when bonding Cu backing plates (Kim, paragraph 54).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wickersham, Jr. et al. (US 2004/0079634 A1, method, article, Sn-Ag, Sn-Pb solder), Yamamoto et al. (US 2002/0100680 A1, method and article, no solder composition), Watanabe et al. (USPN 6176986 B1, Sn-In solder, Ivannov et al. (US 2004/0020769 A1, roughened surface, solder) and Koenigsmann et al. (USPN 6708870 B2).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571)

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272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson  
Primary Examiner  
Art Unit 1725

LNE  
8/3/06

LRE